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*Article history:*

*Keywords:*

$$\frac{S}{H}$$

W (M, S, & S, 2008). (C, 1956; H, 1985).  
 O fi  
 “A B ...”  
 B,  
 “T  
 ...” (G & C, 1994; G, C, & , 1995).  
 P  
 order)  
 (“I ...”),  
 (H, 1986, 1992, 1994; H & , 1992). S  
 (H, 1986).  
 O B, T, K, & H, 2008; V B, V  
 A N400  
 (“I ...”),  
 (T, 2008; V B, 2009). H  
 (P600; V, 2012);  
 B, K, O, & N, 2009; V  
 O, B, & M, L, 1999)  
 R, 2010; C & V P, 2009;  
 C & W, 2005; C & W, 2005). F  
 (MRI)  
 (T, 2008).  
 T  
 2008) J  
 ( fi, ni-naru fi, suru)  
 T  
 ( fi, A  
 ( F, 2011; S, 2005).  
 T  
 C  
 T  
 M  
 A  
 N400

(you/your) M C (nin/nin-de)  
 (ni/ni-de)  
 T  
 (L-W, 2000; , 2008).  
 T  
 R T (W & S, 2004),  
 A  
 R T  
 A  
 (S & W, 1995;  
 W & S, 2004). A  
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 R T  
 A F P L  
 (“I”,  
 A  
 P L A S  
 “ ” (C, 1956; M, 2003). H P L  
 not  
 A (B & L, 1998; K, 2002). O P L  
 (M,  
 2003). F  
 ( fi,  
 (“  
 ).  
 W  
 T  
 (nin-de) (ni-de). F  
 ( T 1).  
 T  
 P  
 P600 (L & F, 2003; O  
 , 1999). H  
 T 1. H  
 A  
 N400

P600 (H, H, B, & P, 2004; H, S, -P, & H, 2009; V, B, 2008; V, B, H, N, O, & M, 2009). S, fi, N400 .O ERP . S, fi, (T 1) 84 8-385.14( )6-268 .1(8-38.1( )-35T,6( )-5, (( )-)-1.6( ) ( )-38 5.2( 8(-)5.6 )11.3 ( )4, ( .6( 84 ) 5.1(8-38 1( )



ni-de)

## 2.5. EEG recording

EEG (E, I, T) 62 (VEOG) EOG (HEOG) T EEG  
E, fi 0.01 7 0 H 5 Ω T fi 500 H

## 2.6. EEG analysis

T F nin-de, 7 6 % 65 μV 34.2, 34, 34.8  
ni-de, 35.5, 34.2 33.8  
ERP E 200  
nin-de 1600 ni-de 200-  
R EEG (ANOVA) (300–500) N400, 500–800 ERP  
(800–1600) C (nin-de)  
(ni-de), T, R 5 (3, T  
15 (ROI), (F3, F5, F), (FC3, FC5, FT), (C3, C5,  
T), (CP3, CP5, TP), (P3, P5, P), (F1,  
F, F2), (FC1, FC, FC2), (C1, C, C2), (F4, F6, F8),  
(CP1, CP, CP2), (P1, P, P2), (C4, C6, T8),  
(FC4, FC6, FT8), (P4, P6, P8), C  
(CP4, CP6, TP8), ROI fi T G -G  
F C  
(K, 1991). A ERP  
ERP

## 3. Results

### 3.1. Behavioral data

#### 3.1.1. Online verification accuracy

T nin-de 94.8%  
(M = 42.6, SD = 1.65)  
94.6% (M = 42.5, SD = 1.95)  
94.2% (M = 42.39, SD = 2.12)  
T ni-de  
94.4% (M = 42.50, SD = 2.15)  
94.4% (M = 42.4, SD = 1.89)  
93. % (M = 42.1, SD = 2.25)  
A ANOVA  
F(2,58) = 1.85,  $p > 0.1$ ,  
F(1,29) = 1.26,  $p > 0.1$ ,  
F(2,58) = 1.52,  $p > 0.1$ .

### 3.1.2. Post-experiment scenario rating

A T  
nin-de 6.68 4.85  
3.2  
ni-de 6.31, 2.54, 4.8  
ANOVA  
F(2,56) = 253.9,  $p < 0.001$ ,  
S fi F(2,56) = 13.52,  
 $p < 0.001$ . F  
F(1,28) = .49,  $p < 0.001$ ,  
F(1,28) = 19.62,  $p < 0.001$ ,  
nin-de  
ni-de  
M  
r = 0.69,  $p < 0.001$   
r = 0.45,  $p < 0.05$   
T fi fi  
M ni-de  
nin-de.

### 3.2. ERPs

ERP F .2 ( nin-de ) 3 ( ni-de ),  
C nin-de, 300–500 500–  
1800 (F .2 4). I ni-de  
300–500 500–1800  
(F .3 4). M  
ERP ni-de, nin-  
P200 P200 fi  
P200 nin-  
de (L, P, & H, 2003; M, 2008). A  
P200, N400  
(F .5). T  
3.2.1. The status-consistency effects in the 300–500 ms window  
R ANOVA fi  
fi F(2,58) = 4.45,  
 $p < 0.05$ ,  
nin-de ni-de,

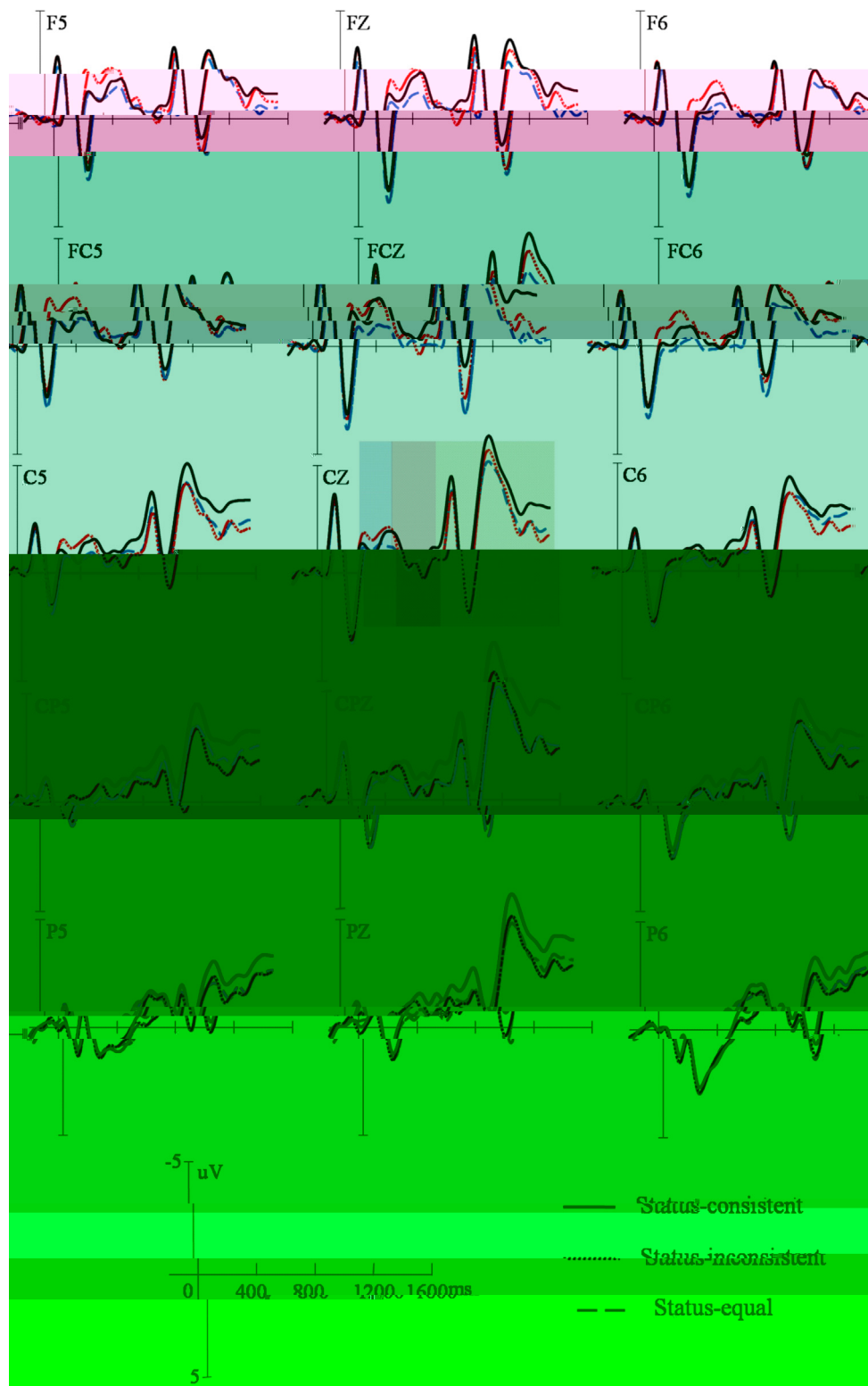
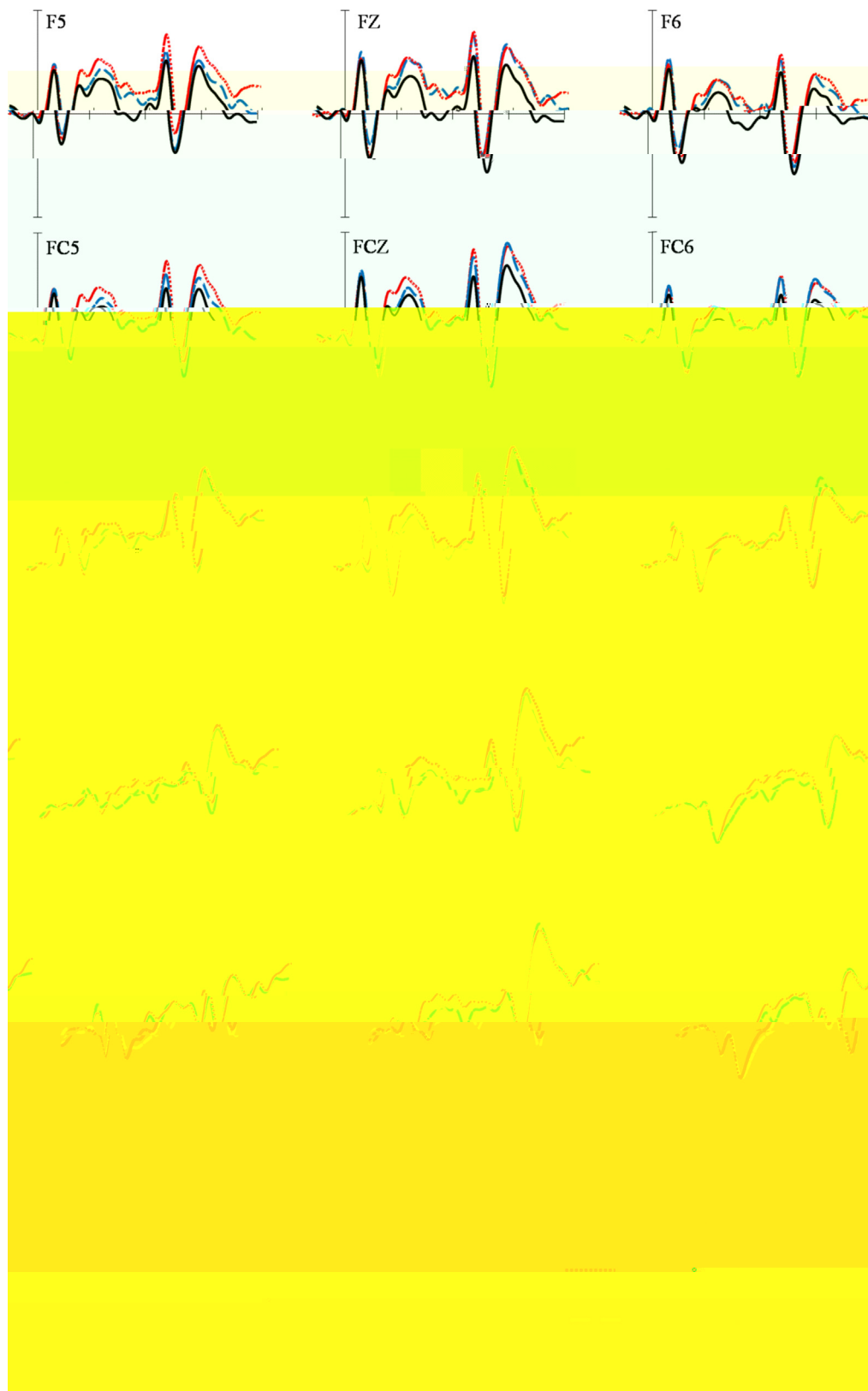


Fig. 2. G  
nin-de

ERP  
 $-0.53 \mu\text{V}$ ,  $F(1,29)=5.59$ ,  $p < 0.05$ ,  
 nin-de, M  
 $F(8,232)=3.78$ ,  $p < 0.05$ ,  
 $F(2,58)=2.65$ ,  $0.05 < p < 0.01$ ,  
 nin-de, ANOVA



**Fig. 3.** G

ni-de

9

200

1600

ni-de,

$p < 0.001$ . F

$F(8,232)=4.20$ ,

$(4,116)=7.63$ ,  $p < 0.005$ . T

$F(1,19)=8.02$ ,  $p < 0.01$ ,

$F(4,116)=3.45$ ,  $p < 0.05$ ;

$(F : F(1,29)=3.05$ ,  $0.05 < p < 0.1$ ;  $F_0 :$

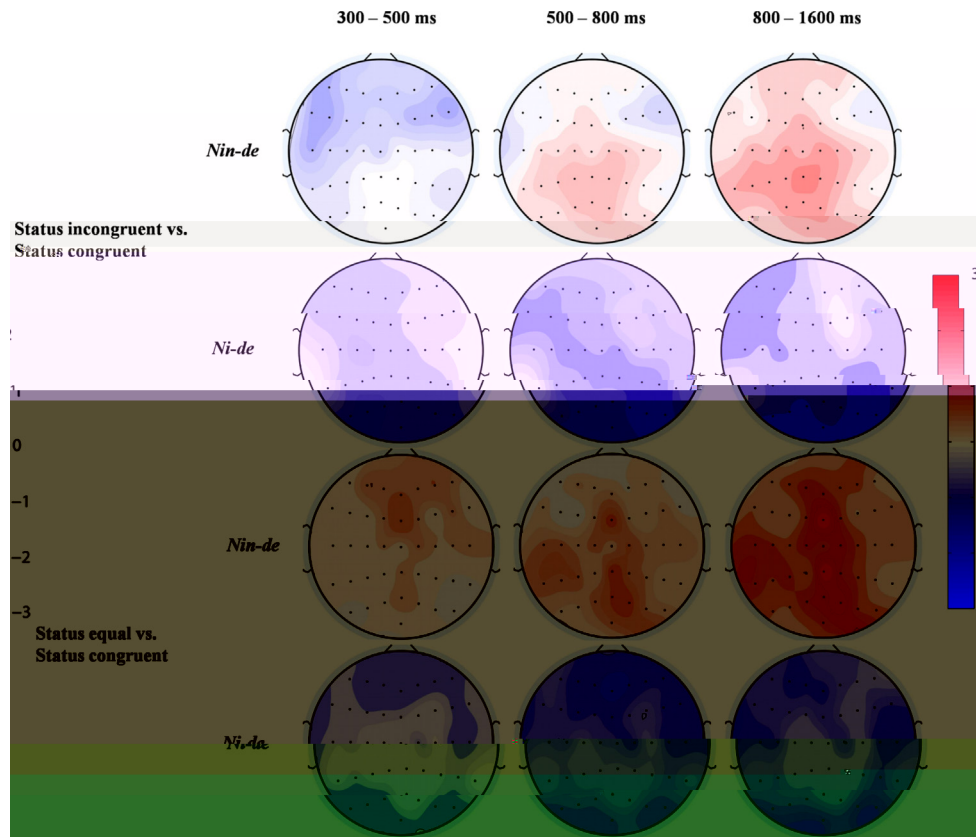


Fig. 4. T

ERP

 $F(1,29)=3.94, p < 0.05$ 

(F :

 $F(1,29)=10.75, p < 0.005$ ;  $F(1,29)=12.25, p < 0.005$ ;  $F(1,29)=7.01, p < 0.05$ . N

(F &lt; 1, F .1).

ni-de, ANOVA

,  $F(2,58)=3.44$ ,
 $p < 0.05$ . F
,  $F(1,29)=7.75, p < 0.01$ ,,  $F(1,29)=2.74, 0.05 < p < 0.1$ . N

, F &lt; 1. T

fi

(-0.8  $\mu$ V)

fi

(-0.2  $\mu$ V). A

(F &lt; 1, F .2).

T

F

ERP

nin-de

ni-de, F &lt; 1. F

(-0.55  $\mu$ V)

ni-de

nin-de:  $F(1,29)=4.02, 0.05 < p < 0.1$ ,  
(-0.68  $\mu$ V),  $F(1,29)=$ 4.9,  $p < 0.05$ . S(-0.6  $\mu$ V) ni-denin-de:  $F(1,29)=5.59, p < 0.05$ .

## 3.2.2. The status-consistency effects in the 500–800 ms window

T

ANOVA

fi

F &lt; 1,

, F &lt; 1,

fi

## 3.2.3. The status-consistency effects in the 800–1600 ms window

A

ANOVA

fi

, F &lt; 1,

fi



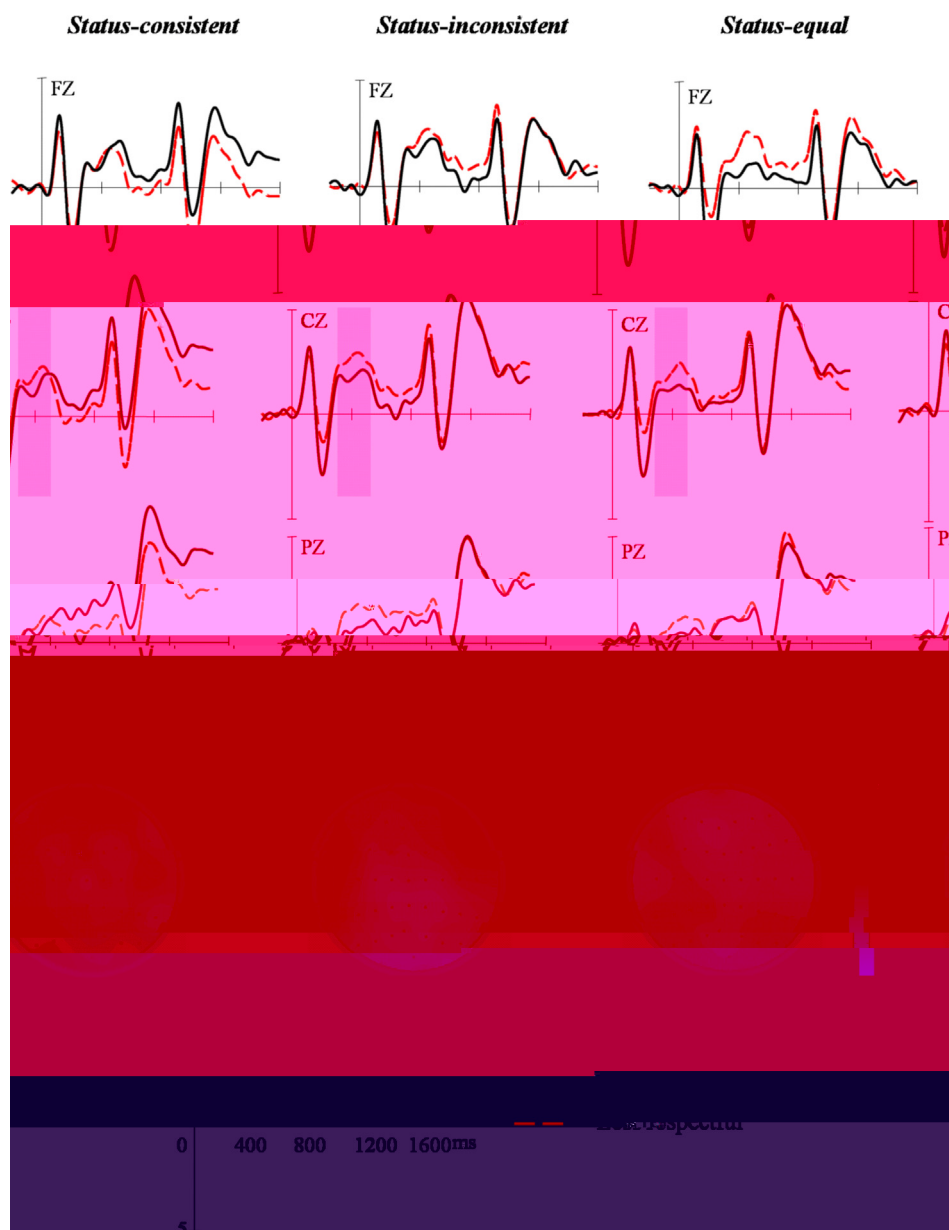


Fig. 5. G

3

T ERP ni-de nin-de, 200 1600  
( 300–500 )

,  $F < 1$ ,  $F(2,58) = 4.91$ ,  $p < 0.05$ . W

F ni-de,  $F(2,58) = 3.34$ ,  $p < 0.05$ ,

F nin-de,  $F(2,58) = 3.9$ ,  $p < 0.05$ ,

ERP  $(-0.92 \mu V)$ ,  $F(1,29) = 3.4$ ,  $p < 0.05$ ;  $-0.8 \mu V$ ,  $F(1,29) = 3.40$ ,  $p < 0.05$ ,  $F(2) = .2$ . N

( $0.2 \mu V$ ),  $F(1,29) = 4.18$ ,  $p < 0.05$ ;  $0.62 \mu V$ ,  $F(1,29) = 3.44$ ,  $p < 0.05$ . T

T ERP  $F < 1$ .

$p < 0.05$ ,  $F(4,116) = 4.56$ ,  $(1.03 \mu V)$ ,  $0.54 \mu V$

EEG  $0-100$  ms ( $J$ , 2009). A  $100 \mu V$

ANOVA)

$r = 0.41$ ,  $p < 0.05$ .

H  $F < 1$ ,

#### 4. Discussion

The present study examined the ERP responses to honorific forms of a pronoun with social-status information. The results showed that the N400 component was elicited by the over-respectful utterances (e.g., *ni-de*, *nin-de*) compared to the neutral utterances (e.g., *ni*, *nin*). This finding is consistent with previous studies (e.g., C, 1956; H, 1985; L & W, 2000; M, 2003; M, 2008). The ERP results also showed that the N400 component was elicited by the over-respectful utterances (e.g., *ni-de*, *nin-de*) compared to the neutral utterances (e.g., *ni*, *nin*). This finding is consistent with previous studies (e.g., C, 1956; H, 1985; L & W, 2000; M, 2003; M, 2008). The ERP results also showed that the N400 component was elicited by the over-respectful utterances (e.g., *ni-de*, *nin-de*) compared to the neutral utterances (e.g., *ni*, *nin*). This finding is consistent with previous studies (e.g., C, 1956; H, 1985; L & W, 2000; M, 2003; M, 2008).

##### 4.1. N400 and integration of honorific forms of a pronoun with social-status information

The present study examined the ERP responses to honorific forms of a pronoun with social-status information. The results showed that the N400 component was elicited by the over-respectful utterances (e.g., *ni-de*, *nin-de*) compared to the neutral utterances (e.g., *ni*, *nin*). This finding is consistent with previous studies (e.g., C, 1956; H, 1985; L & W, 2000; M, 2003; M, 2008). The ERP results also showed that the N400 component was elicited by the over-respectful utterances (e.g., *ni-de*, *nin-de*) compared to the neutral utterances (e.g., *ni*, *nin*). This finding is consistent with previous studies (e.g., C, 1956; H, 1985; L & W, 2000; M, 2003; M, 2008).

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##### 4.2. The sustained positivity for the over-respectful utterances

The present study examined the ERP responses to honorific forms of a pronoun with social-status information. The results showed that the N400 component was elicited by the over-respectful utterances (e.g., *ni-de*, *nin-de*) compared to the neutral utterances (e.g., *ni*, *nin*). This finding is consistent with previous studies (e.g., C, 1956; H, 1985; L & W, 2000; M, 2003; M, 2008). The ERP results also showed that the N400 component was elicited by the over-respectful utterances (e.g., *ni-de*, *nin-de*) compared to the neutral utterances (e.g., *ni*, *nin*). This finding is consistent with previous studies (e.g., C, 1956; H, 1985; L & W, 2000; M, 2003; M, 2008).



“、” (nin-de) -  
. T  
、  
、  
(nin-de)



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